

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of:

Lutz BIEDERMANN et al.

Serial No.: 10/763,431

Filing Date: January 22, 2004

For: BONE SCREW

Examiner: Pedro Philogene

Group Art Unit: 3733

**SUPPLEMENTAL SUGGESTION OF INTERFERENCE**  
**UNDER 37 CFR 41.202(a)**

MS Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This paper responds to the Communication dated April 16, 2007, and supplements the Suggestion of Interference Under 37 CFR 41.202(a) filed January 10, 2006. Applicants thank Special Programs Examiner Harrison for her courtesies in a telephone conference on April 26, 2007, in explaining the basis for the Communication dated April 16, 2007. Applicants note that the reference in the Communication to applicants' interference request of July 9, 2004, is incorrect and that, according to SPrE Harrison, she and Examiner Philogene did consider applicants' suggestion filed January 10, 2006.

Although prosecution is closed, applicants also respectfully request the Examiner to consider the Supplemental Amendment submitted herewith to correct typographical errors in claims 26 and 27 that cause them to depend from canceled claim 25. Entry of this amendment, which is ministerial in nature, will reduce issues in the interference.

In this Supplemental Interference Suggestion, applicants will respond to the comments in the Communication *seriatim*.

**I.**

**“Applicant failed to (1) identify all claims that the applicant believes interfere, \* \* \*. See 37 CFR 41.202(a) and MPEP 2304.02(b).”**

Applicants respectfully submit that their suggestion of January 10, 2006, complied with this requirement exactly under the heading **“INTERFERING CLAIMS”** on page 2, where applicants stated, “Applicants’ presently pending claims 6-10, 12, 13, 17, 18, 20-24, 26-35, 40-42, 61 and 62 interfere with Carbone patent claims 1-39, from which they are copied in part as shown by the table below.” The table referred to in this passage may be found on pages 2-3 of the suggestion.

**II.**

**“Applicant failed to \* \* \* (2) propose one or more counts, \* \* \*. See 37 CFR 41.202(a) and MPEP 2304.02(b).”**

Again, applicants respectfully submit that page 2 of their suggestion complied exactly with this requirement under the heading **“PROPOSED COUNT.”**

**III.**

**“Applicant failed to \* \* \* (3) show how the claims correspond to one or more counts. See 37 CFR 41.202(a) and MPEP 2304.02(b).”**

Again, applicants respectfully submit that pages 2-5 of their suggestion complied exactly with this requirement under the heading **“CORRESPONDENCE OF PARTIES’ CLAIMS TO COUNT.”**

**IV.**

**“With respect to (2), applicant lists a variety of claims as being the proposed count. Respectfully, a count cannot consist of more than one claim. See 37 CFR 41.201 for the definition of a count.”**

Respectfully, this comment is not correct. First, there is nothing in the definition of a count in 37 CFR 41.201 (or in the language of MPEP 2304.02(b)) that states a count must be a single claim. The undersigned believes that SPRe Harrison recognized this in the telephone conversation of April 26, 2007. Second, this type of count, which is known as a “McKelvey count” in view of its origination by SAPJ Fred McKelvey, has been in use for many years and

has been proposed by the Board in many interferences. As such, this type of count is perfectly acceptable.

A McKelvey count is particularly appropriate in this case in view of the fact that applicants have copied exactly so many of the Carbone patent claims – the count proposed by applicants represents the combined subject matter of all of the Carbone patent claims applicants can copy and thus properly represents the common inventive subject matter of the parties as to which priority should properly be contested. All of the claims listed in the original proposed count thus correspond exactly to the original proposed count, and applicants explained on pages 3-5 of the suggestion why Carbone patent claims 9, 12, 14, 21, 28, 31, 34-36 and 39, which applicants could not copy exactly, correspond to the proposed count because they are unpatentable over the subject matter of the count. Setting up the count this way produces the result that the McKelvey count was designed to produce, clarity in correspondence of the parties' claims to the count.

Applicants believe firmly that the proposed count is appropriate and that they have properly explained why the claims of the parties identified as interfering correspond to the proposed count. However, without prejudice to applicants' rights, and with the exhortation that applicants consider their original proposed count to be the proper one for this case, applicants suggest the following alternative proposed count based on applicants' and Carbone's claim 33:

**Substitute Proposed Count**

1. A coupling element for a bone fixation assembly comprising:
  - an upper end defining a first plane;
  - a lower end defining a second plane;
  - at least one bore extending between said upper end and said lower end, said at least one bore being adapted to receive an anchoring element, wherein said first plane and said second plane intersect one another;

said coupling element having a U-shaped opening that extends from the upper end of said coupling element toward the lower end of said coupling element, wherein said U-shaped opening is adapted to receive a stabilizing rod.

Applicants also note that a simplified “McKelvey count,” listing only the independent claims of the parties, is another alternative that would be appropriate under the circumstances. Such a simplified count would read as follows:

**Simplified McKelvey Count**

1. The assembly or coupling element of Carbone claims 1, 18, 24, 33 or 38,

or

the assembly or coupling element of Biedermann claims 6, 18, 28, 33 or 35.

This simplified McKelvey count has the advantage of combining the parties’ independent claims, which are not patentably distinct from one another, while sweeping in the remaining dependent claims, which do not add features that render their subject matter as a whole each separately patentable over the parties’ combined independent claims. This count also has the advantage of allowing the parties to present priority proofs that correspond to the full scope of their respective inventions.

**V.**

**“With respect to (3), see 37 CFR 41.207(b)(2) for an explanation of ‘correspondence to a count.’ Claims do not correspond to a count because they are copied from a patent; correspondence is based upon the subject matter of the count and the state of the prior art. See also MPEP 2304.02(b) and 2301.03.”**

Given that the count originally proposed by applicants was a McKelvey count that incorporated the subject matter of all of the Carbone patent claims that applicants could copy exactly, applicants respectfully submit that this comment was incorrect when made. If an applicant copies patent claims, and those copied claims form the subject matter of the count, as they did here, then the original patent claims and the copied claims correspond exactly to the count in that they claim the same subject matter that the count encompasses. That is, if the count

is assumed to be prior art, then the claims of the parties identified as corresponding to the count are anticipated by the count. *See*, 37 CFR 41.207(b)(2). Applicants explained on pages 3-5 of their original suggestion why the claims of Carbone's patent that were not expressly incorporated into the count, Carbone patent claims 9, 12, 14, 21, 28, 31, 34-36 and 39, are unpatentable over the count and thus correspond to the count. Applicants do not repeat that analysis here and respectfully refer the Examiner thereto.

All of the parties' claims correspond to the first alternative count proposed above. The other independent claims of the parties, and the claims depending therefrom, add details that do not differ sufficiently from the first alternative count that the subject matter of the other independent claims would have been patentable over the alternative proposed count.

Applicants' claims 6, 22 and 28 and Carbone claims 1, 18 and 24 differ from the first alternative proposed count in substance by reciting the presence of an anchoring element, e.g., a bone screw, assembled with the coupling element. The prior art of record in this application (for example, Biedermann U.S. Patent No. 5,443,467 and Morrison U.S. Patent No. 5,891,145) shows many examples of bone screws as anchoring elements assembled with coupling elements, so these independent claims correspond to the first alternate proposed count. Applicant's claim 35 and Carbone claim 38 are directed to the coupling element as defined in the proposed count but in slightly different language and thus correspond to the proposed count as well.

Applicants' and Carbone's dependent claims do not add details to their respective independent claims that would make their subject matter as a whole unobvious over the proposed count. The following chart sets forth applicants' dependent claims, indicates which of Carbone's claims corresponds to applicants' listed claims (Carbone's claims being identical in wording to applicants' listed claims) and explains briefly why the added features of the claims do not make the claims separately patentable over the first of the proposed counts listed above (since the simplified McKelvey count includes the subject matter of Carbone and applicants' claim 33, any

claim that is unpatentable over the first of the proposed counts above is perforce unpatentable over the simplified McKelvey count as well).

<b><u>APPLICANTS' CLAIMS</u></b>	<b><u>CARBONE'S CORRESPONDING PATENT CLAIMS</u></b>	<b><u>DISCUSSION</u></b>
7. The assembly of Claim 6 wherein said coupling element has an upper end and a lower end , said first bore extending from said upper end toward said lower end and said second bore extending from said lower end toward said upper end.	2	The features added by this claim are either inherent in the basic structure of the coupling element of applicants' and Carbone's claim 33 or are obvious characteristics of how at least two bores would be oriented within the coupling element of the base claim.
8. The assembly of Claim 7, wherein said first and second bores are in communication with one another between said upper and lower ends of said coupling element.	3	The feature added by this claim merely requires the bores to communicate within the coupling element, which is well-known and would have been obvious if not inherent.
9. The assembly of Claim 7, wherein said upper end of said coupling element defines a first plane and said lower end of said coupling element defines a second plane, and wherein said first and second planes intersect one another.	4	This language corresponds to the language of claim 33 and is thus unpatentable thereover.
10. The assembly of Claim 7, wherein said anchoring element projects from said lower end of said coupling element.	5	It is very well-known to use a screw that projects from the coupling element as the anchoring element. See. e.g., FIGS. 1-4 of Biedermann U.S. Patent No. 5,443,467.
12. The assembly of Claim 7, wherein said second bore includes a seat	6	The screw that projects from the coupling element as disclosed in

<b><u>APPLICANTS' CLAIMS</u></b>	<b><u>CARBONE'S CORRESPONDING PATENT CLAIMS</u></b>	<b><u>DISCUSSION</u></b>
adjacent said lower end of said coupling element, and wherein said seat is adapted to engage said anchoring element.		Biedermann '467, for example, is pivotable relative to the coupling and has a head that can engage a seat within the coupling element.
13. The assembly of Claim 12, wherein said anchoring element has a head having a substantially spherical underside adapted to engage said seat.	7	The underside of the screw head disclosed in Biedermann '467 is approximately spherical and can engage a seat within the coupling disclosed in this reference.
40. The assembly of Claim 13, wherein said anchoring element includes a neck adjacent said head having a diameter less than the diameter of said threaded portion for facilitating pivotal movement of said coupling element and said anchoring element relative to one another.	8	This feature is rather old as a matter of mechanical contrivance, in that it defines only a screw having a shank that is smaller in diameter than the threaded portion of the screw.
17. The assembly of Claim 13, further comprising a locking element engageable with said coupling element for locking the position of said coupling element with respect to said anchoring element.	10	Biedermann '467 discloses a locking nut 12 that can be screwed down so as to lock bone screw head 1. Morrison U.S. Patent No. 5,891,145 discloses in FIG. 2 a locking member 70 that can be screwed down on spinal rod 80 and thence onto the head of bone screw 20.
18. The assembly of Claim 17, wherein said locking element urges a stabilizing rod toward said lower end of said coupling	11	Morrison '145's locking member 70, when tightened, urges spinal rod 80 in the direction of the lower end of the receiver

<b><u>APPLICANTS' CLAIMS</u></b>	<b><u>CARBONE'S CORRESPONDING PATENT CLAIMS</u></b>	<b><u>DISCUSSION</u></b>
element which in turn forces said head of said anchoring element against said seat for locking said coupling element and said anchoring element from further movement relative to one another.		member 30.
61. The assembly of claim 6, wherein said anchoring element is a separate member assembled with said coupling element so that said coupling element and said anchoring element are movable relative to one another.	13	It is very well-known to use a screw that is separate from the coupling member and projects from the coupling element as the anchoring element. See, e.g., FIGS. 1-4 of Biedermann '467.
62. The assembly of claim 6, further comprising a locking element engageable with said coupling element for securing a stabilizing rod within said coupling element.	15	Biedermann '467 discloses a locking nut 12 that can be screwed down so as to lock bone screw head 1. Morrison '145 discloses in FIG. 2 a locking member 70 that can be screwed down on spinal rod 80 and thence onto the head of bone screw 20.
20. The assembly of Claim 6, wherein said coupling element has an exterior surface, an upper end and a lower end, said rod-receiving openings extending from said upper end toward said lower end, and wherein said coupling element comprises cuts between said exterior surface and said rod-receiving openings for minimizing the width of said coupling	16	The receiver member 5 disclosed in Biedermann '467 has an exterior surface, and upper end and a lower end, with U-shaped recess 6 acting as the rod-receiving openings. The claimed cuts are simply reduced diameter areas on the outside of the coupling member and would have been obvious design expedients.



<b><u>APPLICANTS' CLAIMS</u></b>	<b><u>CARBONE'S CORRESPONDING PATENT CLAIMS</u></b>	<b><u>DISCUSSION</u></b>
element.		
21. The assembly as claimed in Claim 6, wherein said anchoring element is a screw fastener having screw threads extending from said first end toward a second end thereof.	17	It is very well-known to use a screw that projects from the coupling element as the anchoring element. See, e.g., FIGS. 1-4 of Biedermann '467.
23. The assembly of Claim 22, wherein said coupling element includes at least one bore extending between said upper end and said lower end for receiving said anchoring element.	19	The features added by these claims are either inherent in the basic structure of the claimed coupling element or are obvious characteristics or how the bores would be oriented within the coupling element of the base claim.
24. The assembly of Claim 22, wherein said coupling element has a seat shaped to allow said coupling element to pivot with respect to said anchoring element.	20	The screw that projects from the coupling element as disclosed in Biedermann '467 is pivotable relative to the coupling and has a head that can engage a seat within the coupling element.
26. The assembly of Claim 24, wherein said head has at least one depression adapted to receive a driver for driving said anchoring element into bone.	22	This is nothing more than a statement that the anchoring element (i.e., a screw) has a slot in its head to allow a driver to drive the screw into the bone.
27. The assembly of Claim 24, wherein said anchoring element includes a reduced diameter neck for facilitating pivotal movement of said coupling element with respect to said anchoring element.	23	This feature is rather old as a matter of mechanical contrivance, in that it defines only a shank of a screw that is smaller in diameter than the threaded portion of the screw.

<b><u>APPLICANTS' CLAIMS</u></b>	<b><u>CARBONE'S CORRESPONDING PATENT CLAIMS</u></b>	<b><u>DISCUSSION</u></b>
29. The coupling element of Claim 28, wherein said second bore includes a seat adjacent said lower end of said coupling element.	25	The screw that projects from the coupling element as disclosed in Biedermann '467 is pivotable relative to the coupling and has a head that can engage a seat within the coupling element.
30. The coupling element of Claim 29, wherein said seat is adapted to engage a head of an anchoring element secured with said coupling element so that said coupling element and said anchoring element are pivotable relative to one another.	26	The screw that projects from the coupling element as disclosed in Biedermann '467 is pivotable relative to the coupling and has a head that can engage a seat within the coupling element.
31. The coupling element of Claim 30, wherein said seat is adapted to engage an underside of said head of said anchoring element.	27	As can be seen in Figs. 1-4 of Biedermann '467, the underside of the screw head can engage the seat.
41. The coupling element of Claim 30, wherein said inner surface includes threads adjacent said upper end thereof for engaging a locking element for securing an orthopedic rod within said rod receiving openings of said coupling element.	29	Morrison '145 discloses receiver member 30 that is internally threaded to receive locking member 70, which may be screwed down onto spinal rod 80 as can be seen in FIG. 2, for example.
42. The coupling element of Claim 34, wherein said locking element has external threads adapted for threading into said internal threads of said	30	Morrison '145's locking member 70 is externally threaded so as to engage the internal threads of receiver member 50. Biedermann '467 shows a

<u><b>APPLICANTS' CLAIMS</b></u>	<u><b>CARBONE'S CORRESPONDING PATENT CLAIMS</b></u>	<u><b>DISCUSSION</b></u>
coupling element.		similarly threaded rod locking nut 13.
32. The coupling element of Claim 28, wherein said coupling element has an outer surface with notches for engagement by an instrument for positioning said coupling element with respect to an orthopedic rod.	32	Although the prior art of record does not show this feature explicitly, Biedermann '467 shows external threads on receiver member 5 that engage with lock nut 14, which is used with rod locking nut 13 to position and retain the orthopedic rod 16 within the receiver member (coupling element).
34. The coupling element as claimed in Claim 33, wherein said coupling element has a first bore extending from said upper end toward said lower end and a second bore extending from said lower end toward said upper end, and wherein said first and second bores are angled relative to one another.	37	The features added by this claim are either inherent in the basic structure of the coupling element of applicants' and Carbone's claim 33 or are obvious characteristics of how at least two bores would be oriented within the coupling element of the base claim.

## VI.

### **“Applicant failed to provide a claim chart comparing at least claim of each party corresponding to the count.”**

Applicants had reasonably thought that given the identity of the proposed count to many of the parties' claims, providing a separate claim chart was not necessary. However, in accordance with SPtE Harrison's kind suggestion, applicants provide the chart below to show how the first alternative proposed count is identical in language to the indicated claims from this application and the Carbone patent (with Carbone's claim paragraphed to demonstrate its identity with the proposed count and applicants' claim). Since the simplified McKelvey count set forth

above incorporates applicants' and Carbone's claim 33, this chart suffices for the simplified McKelvey count as well:

Proposed Count	Applicants' Claim	Carbone's Claim
<p>1. A coupling element for a bone fixation assembly comprising:</p> <p>an upper end defining a first plane;</p> <p>a lower end defining a second plane;</p> <p>at least one bore extending between said upper end and said lower end,</p> <p>said at least one bore being adapted to receive an anchoring element,</p> <p>wherein said first plane and said second plane intersect one another;</p> <p>said coupling element having a U-shaped opening that extends from the upper end of said coupling element toward the lower end of said coupling element,</p> <p>wherein said U-shaped opening is adapted to receive a stabilizing rod.</p>	<p>33. A coupling element for a bone fixation assembly comprising:</p> <p>an upper end defining a first plane;</p> <p>a lower end defining a second plane;</p> <p>at least one bore extending between said upper end and said lower end,</p> <p>said at least one bore being adapted to receive an anchoring element,</p> <p>wherein said first plane and said second plane intersect one another;</p> <p>said coupling element having a U-shaped opening that extends from the upper end of said coupling element toward the lower end of said coupling element,</p> <p>wherein said U-shaped opening is adapted to receive a stabilizing rod.</p>	<p>33. A coupling element for a bone fixation assembly comprising:</p> <p>an upper end defining a first plane;</p> <p>a lower end defining a second plane;</p> <p>at least one bore extending between said upper end and said lower end,</p> <p>said at least one bore being adapted to receive an anchoring element,</p> <p>wherein said first plane and said second plane intersect one another;</p> <p>said coupling element having a U-shaped opening that extends from the upper end of said coupling element toward the lower end of said coupling element,</p> <p>wherein said U-shaped opening is adapted to receive a stabilizing rod.</p>

## VIII.

**“Applicant failed to provide a claim chart showing, for each constructive reduction to practice for which the applicant wishes to be accorded benefit, wherein the disclosure provides a constructive reduction to practice within the scope of the interfering subject matter.”**

Applicants particularly appreciate SPrE Harrison’s explanation of this issue. Since, as shown on pages 7-14 of applicants’ original suggestion, the claims in this application are supported by applicants’ original disclosure, which is the same in the parent to this application as it is in this application, applicants had considered that that showing was sufficient to shown entitlement to benefit in their parent application. However, as SPrE Harrison pointed out, the Board desires to see a formal claim chart discussing all applications as to which benefit is sought as to each proposed count, so applicants are pleased to provide the claim chart below, in which the proposed count is applied to the disclosure of their parent application Serial No. 10/037,698, filed November 9, 2001, now U.S. Patent No. 6,736,820, as well as to the disclosure of applicants’ earlier German priority application, showing that each discloses at least an embodiment within the scope of the original and alternative proposed counts since the original and both alternative proposed counts incorporate the subject matter of Carbone’s and applicants’ claim 33.

Proposed Count	Support in Translation of DE 100 55 888.7	Supporting Disclosure in Parent Application (as shown in U.S. Patent No. 6,736,820)
<u>Proposed Count 1</u> (Applicants’ claim 33 and Carbone patent claim 33) A coupling element for a bone fixation assembly comprising:	The coupling element, receiving member 5, is shown in FIGS. 1-4, particularly FIG. 3.	The coupling element, receiving member 5, is shown in FIGS. 1-4, particularly FIG. 3.
an upper end defining a first plane;	As disclosed at page 4, lines 4-15, the upper end of the receiving part 5, forming first bore 6 at the top of leg 13 as shown on FIG. 3, is the upper end, and it defines a plane	The upper end of the receiving part 5, forming first bore 6 at the top of leg 13 as shown on FIG. 3, is the upper end, and it defines a plane along the top that is also reflected by the

Proposed Count	Support in Translation of DE 100 55 888.7	Supporting Disclosure in Parent Application (as shown in U.S. Patent No. 6,736,820)
	along the top that is also reflected by the horizontal dotted line at the bottom of receiving member 5 on FIG. 3, which is also normal to axis of symmetry 15.	horizontal dotted line at the bottom of receiving member 5 on FIG. 3, which is also normal to axis of symmetry 15. See, col. 2, line 62, to col. 3, line 1.
a lower end defining a second plane;	The lower end of the receiving member 5 shown on FIG. 3 forms an opening plane 11 bounding second bore 7. Page 4, lines 5-10.	The lower end of the receiving member 5 shown on FIG. 3 forms an opening plane 11 bounding second bore 7. See, col. 2, line 62, to col. 3, line 1.
wherein said first plane and said second plane intersect one another;	“The opening plane 11, which bounds the second bore 7, in this embodiment [of FIG. 3] is inclined at a predetermined angle $\alpha$ to the plane bounded by the second plane 7 so that the normal plane 11' to this plane 11 and the axis of symmetry of the first bore enclose the angle of inclination.” Page 4, lines 5-10. The formation of this angle $\alpha$ demonstrates that the first and second planes intersect one another, as also can be seen from FIG. 3.	“The opening plane 11, which bounds the second bore 7, in this embodiment [of FIG. 3] is inclined at a predetermined angle $\alpha$ to the plane bounded by the second plane 7 so that the normal plane 11' to this plane 11 and the axis of symmetry of the first bore enclose the angle of inclination.” Col. 2, line 64, to col.. 3, line 1. The formation of this angle $\alpha$ demonstrates that the first and second planes intersect one another, as also can be seen from FIG. 3.
said coupling element having a U-shaped opening that extends from the upper end of said coupling element toward the lower end of said coupling element, wherein said U-shaped opening is adapted to receive a stabilizing rod.	As shown in FIGS. 1 and 3, receiving member 5 has a U-shaped recess 8 having side legs 13, 14 that are threaded for engagement with a nut 40 or screw 45 that serves to fix a rod to be inserted into the U-shaped recess 8. Page 3, lines 13-22; page 4, lines 4-5.	As shown in FIGS. 1 and 3, receiving member 5 has a U-shaped recess 8 having side legs 13, 14 that are threaded for engagement with a nut 40 or screw 45 that serves to fix a rod to be inserted into the U-shaped recess 8. Col. 2, lines 39-48 and 62-63.

This chart demonstrates that applicants are entitled to the benefit of their parent filing date of November 9, 2001, as well as their first German priority date of November 10, 2000.

Since those applications constitute constructive reductions to practice of a species within the scope of the Proposed Count as of November 10, 2000, more than ten months before Carbone's provisional application filing date of September 14, 2001, applicants are properly named the senior party in the Notice declaring the interference. Applicants reserve the right to challenge Carbone's entitlement to the benefit of its provisional application filing date, if necessary in the interference.

\* \* \* \* \*

Applicants also advise that they have presented claims in their co-pending application, Serial No. 11/319,427, that the Examiner may consider also to be directed to related subject matter. The claims in this co-pending application are not identical to any of Carbone's claims.

### **CONCLUSION**

Applicants believe that they have responded in full to the Communication dated April 16, 2007, and respectfully request favorable action. Applicants are presumptively the prior inventors of the claimed subject matter as against Carbone at least by virtue of their earlier effective filing date and desire an interference to get the PTO's judgment that they are the actual prior inventors entitled to a patent on these claims and that all of Carbone's patent claims should be canceled. Applicants' opportunity to do so should not be further delayed.

In the event that the transmittal letter is separated from this document and the Patent and Trademark Office determines that an extension and/or other relief is required, applicants petition for any required relief including extensions of time and authorize the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952, referencing Docket No. 564682000100.**

Respectfully submitted,

Dated: May 16, 2007

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